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ABSTRACT

This study describes the Michigan special education work force (as of 1988-89) with regard to six issues, one primary and five supplemental, having to do with the need for and supply of special educators and attempts to predict future personnel needs. The primary issue concerns the factors that will affect the teacher supply and demand in the near future. Teacher data were projected over 3 years. The study used predictive models developed by the Office of Special Education Programs, that are either market based or prevalence based. The five supplementary issues include: special education synopsis, personnel gender ratios, teachers of students with learning disabilities, higher education training programs, and special education administrators. Narratives and graphs of statistical data provide analysis of the following areas: special educator shortages, teacher retention, retirement, recruitment, out-of-state teachers, out-of-field teachers, number of teachers issued emergency approval, teachers trained in-state, the market based model, the prevalence model, and data elements. In view of the identified decline in the special education teaching profession, recommendations are made for: (1) training more teachers to enter the field; and (2) retaining current teachers by reducing the level of attrition. Additional discussions and graphs address each of the supplementary issues. Attached tables present the data used in the models. (24 references) (DB)

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A STUDY OF THE SPECIAL EDUCATION WORKFORCE IN MICHIGAN

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A Study of the Special Education Workforce in Michigan

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February, 1990

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Abstract: National reports indicated that teacher shortages vary a good deal from state to state and even within geographic areas of a state. However, the degree of the shortage varied due to unuseable data as well as inadequate collection and analysis methodologies. The purpose of this study was to determine the sources of Michigan teacher data and if they exist, use them to analyze its special education workforce need and supply. Teacher data was projected over three years and database elements were proposed. Results indicated the adequacy of the model proposed by Office of Special Education Programs and its usability by State Education Agencies. Findings and implications for further study are discussed.

Glossary of Terms Used in this Study

Handicapping Areas:

MI - Mentally Impaired
S/L - Speech and Language Impaired
LD - Learning Disabled
TMI - Trainable Mentally Impaired
EI - Emotionally Impaired
POHI - Physically and Otherwise Health Impaired
H/H - Homebound/Hospitalized
VI - Visually Impaired
HI - Hearing Impaired
AI - Autistic Impaired
PPI - Preprimary Impaired
EMI - Educable Mentally Impaired
SMI - Severely Mentally Impaired
SXI - Severely Multiply Impaired

Institutions of Higher Education (IHE)

CMU - Central Michigan University
EMU - Eastern Michigan University
GVS - Grand Valley State University
MSU - Michigan State University
NMU - Northern Michigan University
WSU - Wayne State University
WMU - Western Michigan University

Other Terms

MDE - Michigan Department of Education
TC - Teacher Consultant
REI - Regular Education Initiative
RR - Resource Room

Introduction

This study describes the special education teacher workforce in Michigan with regards to six timely issues. The primary issue covers the factors that will affect the teacher supply and demand in the near future. The five supplementary issues include: special education synopsis, personnel gender ratios, LD teachers, higher education training programs, and special education administrators.

Teacher supply and demand are studied through a concept paper developed by the U.S. Office of Special Education (Smull and Bunsen, 1989). Their concept uses a variety of elements that relate to teacher attrition, recruitment, preparation as well as student data to develop two models. The models are referred to as a **market based** model and a **prevalence** model. The market based model defines need/supply in terms of the number of teaching positions actually funded, and is determined by the number of teaching positions assigned to special education each year. The prevalence based model, on the other hand begins with the number of students and determines need/supply based on teacher/student ratio. This is used to find the number of teachers required to meet the educational needs of Michigan's handicapped student population. Since these models retain different purposes, they are used in this study in combination to determine the status of Michigan's special education workforce.

The purpose of this three-fold study is to:

1. Present a basis for discussing the current special education teacher workforce using two referenced models;

2. Examine "what if" analyses to project the impact of nine factors on teacher need/supply; and

3. Initiate the workforce need/supply debate so that future studies will lend more precision to the factors that were unavailable in this investigation.

Unless otherwise stated, the special education workforce is based on data from the 1988-89 school year. It excludes ancillary staff, teacher consultants, diagnostic staff, and administrators. The five supplementary issues use 'spin-off' data from the primary report and go beyond the topic of personnel.

Special Education Workforce

Is there a shortage of teachers in the special education workforce? Data on both the state and national level suggests a teacher shortage in special education. However, shortages vary among categorical areas as well as between geographical regions.

In a study conducted in 1982, Smith-Davis, et. al. (1984) summarized one of the first national manpower studies on this issue. They reported that 22 of 54 jurisdictions (states and territories), reported personnel shortages. Among some of the jurisdictions that experienced relatively few shortages, it was suggested that the use of generic certification may have clustered personnel under

one heading and thus made sizable shortages appear slight. The most universal shortages of personnel appeared in related services: occupational therapists (with shortages in 37 jurisdictions) and physical therapists (with shortages in 36 jurisdictions). Thirty-three jurisdictions reported ongoing shortages of personnel in the area of services for the emotionally disturbed population. In 12 of these jurisdictions, shortages were termed extremely serious. When coupled with personnel shortages in the area of severe emotional disturbance (including autism), the findings suggested that mild to severe emotional disturbance was the single most vulnerable program area in special education.

In 1986 , these jurisdictions were asked to review and update the information provided in the 1982 study (McLaughlin, et. el.). Forty-seven reported shortages of physical therapists, while 46 indicated a shortage of occupational therapists. Next in frequency of reported need were speech and language personnel (reported by 41 jurisdictions), followed closely by teachers of the seriously emotionally disturbed (40 jurisdictions). A shortage of personnel in the area of the severely handicapped was reported in 33 jurisdictions, and multiply handicapped in 26 jurisdictions.

Brauen (1989), in her personnel report to the Third Annual Conference on Data Collection, found that positions identified as being in need by states in 1985 continued at the same level of need in 1989. Using data collected on December 1st of each school year, she found that the strongest need relationships that continue over time were in the areas of emotionally impaired, multihandicapped, and learning disabled. Related services included physical education, social workers, psychologists, and physical therapists. In general, states with less than 90,000 handicapped students were having a greater shortage of teachers than larger states. However, Brauen's survey also revealed that when special education directors were asked to assess the quality of their personnel, a pattern related to district size emerged–the larger the district was, the lower the rating of its personnel, dropping from "good" to "fair." For very large districts (over 138,000 enrollment), the quality fell to "poor."

Finally, the eleventh annual report to congress on the Implementation of the Education of the Handicapped Act (Office of Special Education, 1989) states that 26,798 more teachers were needed than available in the 1986-87 school year. This figure represents 9% of all special education teachers who were employed as part of the workforce.

Retention

A recent Gallup/Phi Delta Kappan Poll (Elam, 1989) reported that one-half of the teaching staff originally selected in 1984 for the poll had left the profession by 1989. The results of the poll reported that teachers overwhelmingly believed they were unappreciated and unrewarded, and they blamed almost everyone but themselves for recognized school problems. Eighty-two percent of the teachers believed they were underpaid, while only 37% of the general public believed teachers were underpaid. Teachers saw their services as more valuable than those of medical personnel, clergy, and the bench but rated their prestige at the bottom of the occupations even below that of funeral directors, realtors, and advertising personnel.

More importantly, the poll indicated that there are two major reasons for teacher attrition: 77% (down from 87% in 1984) leave because of low salaries; 69% (up from 26% in 1984) leave because of lack of public financial support.

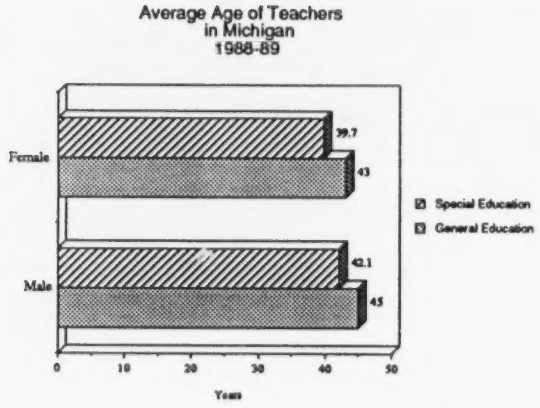
National studies have reported (Bogenschild, et.el., 1988) that attrition rates of special education teachers are significantly higher than those of general education teachers, (in some studies they are double) and that they vary considerably from disability group to disability group. Studies also suggested that retaining teachers under the age of 30 is of critical importance, since this age group (under 30) has the highest attrition rate of all teachers.

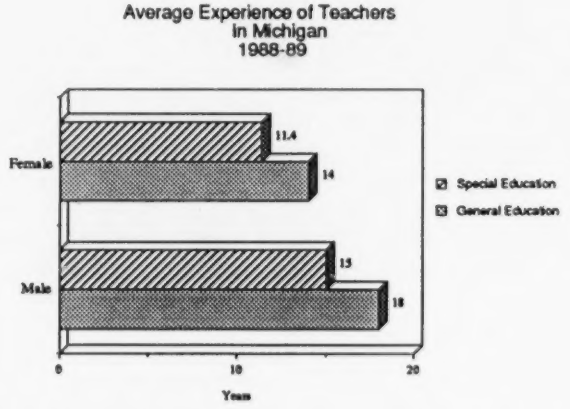
Michigan does not collect specific data on its rate of retention. However, an estimate can be fairly

calculated by deducting the percent of the rate of growth in special education from the percent of staff newly assigned each year. For example, since 1980, special education staff has grown an average of about 0.4% per year. When this percent is deducted from the number of staff newly assigned each year, the remainder will provide an approximation of staff attrition. Using this method over the last three years, the following rates of attrition for special education are provided:

1988-89	3.63%
1987-88	3.92%
1986-87	4.22%

This rate is higher than the rate for general education which when calculated the same way shows an attrition rate between 2.27% and 2.67%. This higher attrition rate in special education is reflected in the lower average age and lower years of experience that special educators have compared to general educators.





The average age of an educator in the 1988-89 school year was 45 for a male and 43 for a female. Special education showed a younger workforce with the average age of a male being 42.1 and a female 39.7. The average number of years of experience of an educator in Michigan was 18 years for a male and 14 years for a female. Special education showed less experienced staff: 15 years experience for males and 11.4 years experience for females.

National studies suggest that retention rates of teachers with graduate training are significantly higher than the retention rates of teachers with undergraduate training only (Bogenschild, 1988). Several factors may influence this finding. Teachers with graduate training often have higher salaries, improved benefits, and/or seniority that may keep them in teaching. In addition, teachers who seek further training may be more committed to teaching and may have acquired instructional skills that help make teaching a more gratifying profession.

In Michigan, the extent of formal education appears to have some effect on the retention of teachers. The number of teachers with bachelor's degrees drops significantly after two years' experience until the seventh year. From the third to the eleventh year the number of teachers with master's degrees shows a dramatic

increase. After eleven years the number of teachers holding bachelor degrees begins to decline rapidly. This shift from undergraduate to graduate degrees suggests that within the first eleven years most staff make a clear commitment to teaching. The special education profession appears to peak at eleven years experience with twice as many staff holding master's degrees. This is followed by a decline for several years by teachers holding both bachelor's and master's degree, and evens out at approximately twenty-seven years of experience.

Retirement

During the 1987-88 school year, 3,965 individuals retired from the Michigan public school employment system. Females tended to retire about three-quarters of a year earlier than males. The average retirement age for a female was 59.6 and the average age for a male was 60.2. However, with a recent retirement bill allowing educators full retirement benefits with thirty years experience, it is expected that the average age of retirement for a Michigan public school employee will drop approximately half a year for the next several years until the average age levels off at 57 or 58. With the current average age for all employees being 60.0, it is likely that the number of educators who retire over the next two or three years will increase slightly more than it has in the recent past.

There are two variables that relate to teacher retirement: experience and age. Neither line graph shows any peak in the number of special education staff who are near retirement. Viewing experience as a key factor, there are 198 teachers with 30 or more years experience. However, it is highly unlikely that all would choose to retire at the same time since many have been eligible for retirement for several years and have not elected to exercise this option.

Since 59.6 is the average age at which females retire, figures show that 235 females have chosen not to. Using 60.2 as the average age that males retire, there are 54 that have choosen not to. In the worst case scenario–that all these potential retirees would leave the profession at once (a total of 487 teachers)–this would represent a small proportion (only 4.3%) of the special education teacher population. This percentage is close to the number of staff newly assigned to special education each year.

Recruitment

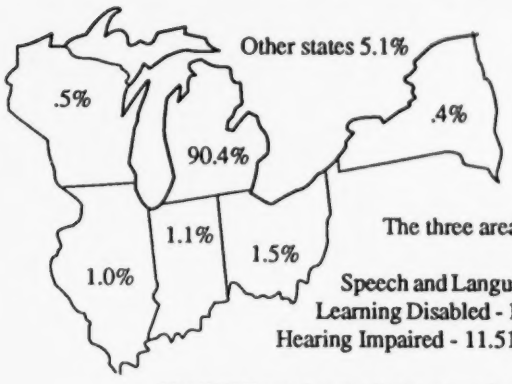
Retention and retirement are two important areas used as baseline data for the special education workforce models. Recruitment is the third. There are four general areas that districts can recruit staff from:

- teachers trained out-of-state,
- experienced teachers returning or transferring into special education,
- teachers issued emergency approvals, and
- teachers newly trained in-state.

Out-of-state teachers

Many teachers who are trained out of state become a source of qualified new hires for several school districts in Michigan. This probably occurs most frequently in school districts adjacent to these states. Since 1981-82, the percent of teaching staff assigned but trained out-of-state has been declining from 10.52% to its current low of 9.57%. It may also be possible that with the national decline in the pool of special education teachers fewer may be available to recruit from out-of-state.

In 1988-89, nearly half of Michigan's teachers who were trained out-of-state came from the following five states:



Ohio	- 172 teachers
Indiana	- 126 teachers
Illinois	- 109 teachers
Wisconsin	- 54 teachers
New York	- 44 teachers

The three areas most heavily recruited from out-state institutions were:

Speech and Language - 13.79% of all staff (a decline from 14.7% in 1986-87)
Learning Disabled - 11.60% of all staff (an increase from 10.7% in the 1986-87)
Hearing Impaired - 11.51% of all staff (a decline from 12.6% in 1986-87)

The POHI area has the lightest number of out-of-state staff: 4.91% (see selected data tables). One reason that makes recruitment of out-of-state teachers a less than acceptable approach when trying to address an existing teacher shortage problem is that these individuals have high mobility and thus are more able to relocate. In addition, other states may have different service delivery systems, certification standards, and special education regulations. As a result, there may be little consistency in teacher competency when teachers are trained out-of-state as opposed to trained within the state's IHEs. So, even though teachers prepared in other states may be a viable source of qualified new personnel in Michigan, they are high risk in terms of retention. Michigan appears fortunate in that it does not have to rely heavily upon teachers trained out-of-state at this time.

Out-of-field teachers

This category includes three pools of teachers: transfer, inactive reserve and active reserve.

- *Those that transfer from general education into special education*

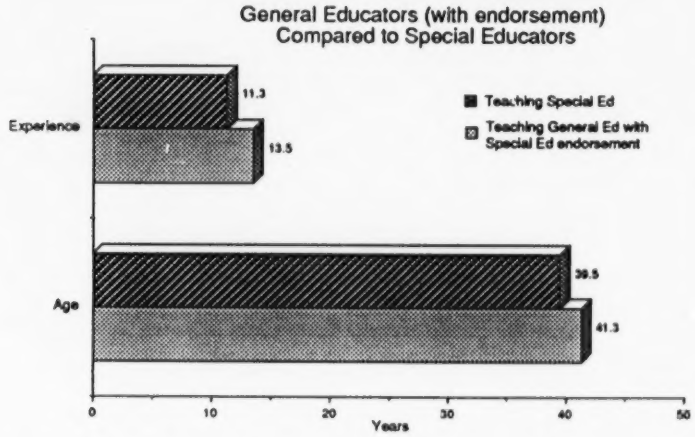
In the 1988-89 school year, 2,626 general education teachers (3% of that staff) held an endorsement in one area of special education; 2,235 of these were females, with 2,200 teaching at the elementary level.

Teachers Holding Special Education Endorsements

	Bachelors	Masters	Specialists	Doctors
Teaching General Ed with Special Ed endorsement	42.3%	55.6%	1.1%	0.8%
Teaching Special Ed	42.0%	56.0%	1.3%	0.7%

The formal training of teachers with special education degrees who are working in general education is very similar to the training of teachers working in special education. A comparison of educational degrees shows a very slight difference in the percentage of degrees held.

However, general education teachers with special education endorsements have more average years of experience and an older average age. This total number of general education teachers represents a potential supply. This supply could become a significant factor to special education at times of economic recession when layoffs of general education personnel tend to occur.



Smith-Davis (1984) reported that in 1982, Michigan was the sole state to report no personnel shortages. She suggests that this was possibly due to the economic downturn at the time. Reductions in education budgets, relaxed restraints on caseload and age-span requirements, reductions in force, and related regressive events concerning the fiscal situation may have led to fewer personnel needs, rather than more.

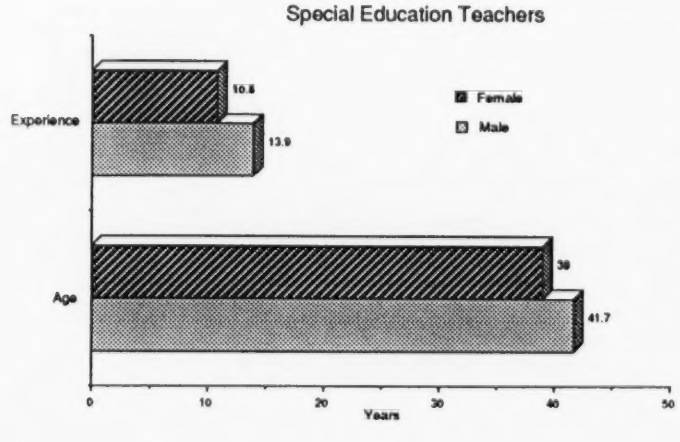
It was during this downturn that a large number of general education staff crossed over into special education (for seniority reasons) and "bumped" many special education staff out of the profession. This is also reflected in the lower average age and years of experience that special education staff have as compared to general education staff.

If another economic downturn occurs in Michigan, it is possible that 22% of the exiting staff in special education could be "bumped" by general education teachers.

There has been one state study that may reflect the current trends in teacher cross over. A study in the state of Washington found that more than 5% of the special education staff transferred into regular education positions in the 1987-88 school year. Among the 36,000 individuals employed in regular education in 1986-87, less than .5% transferred into special education positions.

- *Qualified special education teachers who return after an extended absence from teaching*

Limited national data on this inactive reserve pool suggests that the main reason why teachers return to the field are economic, enrollment of their child(ren) into school, or a desire to return to a challenging profession. It is very difficult to obtain data on the number of professionals who return to teaching after an absence or to obtain data on how long they were absent.



Michigan data suggests that this category consists mostly of females. Females in special education average 2.7 years less in age than that of males and 3.1 years less in experience. These figures indicate that there is a greater turn over of female staff, which tends to lower the average age and years of experience of this group.

- *Qualified teachers who were unable to find employment after graduation but are still seeking entry into the field.*

A difficulty in using only the number of newly prepared teachers to project the supply of personnel available is that there is no data on the active reserve pool. Some portion of new trainees do not actually secure employment in Michigan the year immediately following graduation. Some leave the state to teach; others rear children or work outside the field of education; others may work in general education while waiting for a teaching position to open in the area in which they were trained.

Teachers issued emergency approval

When districts cannot find qualified teachers, they are still required to fill positions for existing programs. Michigan, like most other states, has a policy which permits the hiring of teachers not endorsed in special education after making a reasonable search for a qualified teacher. Such teachers are usually given an emergency approval which permits them to teach for a limited period (typically one year) with continuation contingent upon obtaining a prescribed amount of credits in a special education curriculum at an institution of higher education.

A recent survey obtained data from thirty-five jurisdictions on the number of new special education teachers hired without full teaching certification (emergency approvals). Jurisdictions reporting this information stated that emergency approvals ranged up to 80% of their hired staff (National CSPD Caucus, 1989).

Studies also suggest that the number of new teachers needed each year would be the same as the number of teachers employed on emergency approvals the prior year (Grissmer & Kirby, 1987). A comparison of data indicates that this does not appear to be the case in Michigan. The number of emergency approvals do not show any relationship to the number of staff needed or newly assigned. For example, in the 1987-88 school year, 130 teachers in Michigan were on emergency approval; however, in the following year, 370 new staff were assigned to special education. This same pattern has existed since the 1985-86 school year, when data became available for interpretation. Issuance of emergency approvals in Michigan appears to be more of a random event caused by such factors as last minute attrition, move outs, unplanned retirees, newly funded positions, etc., rather than a method of addressing a teacher shortage.

Comparison of Emergency Approvals to New Assignments

	85-6	86-7	87-8	88-9
Emergency approvals issued	9	65	130	
New assignments made		519	516	370

Moreover, emergency approvals could not be considered a solution to a teacher shortage problem since these teachers often leave the position as soon as a different job becomes available in the area in which they were trained.

Teachers trained in-state

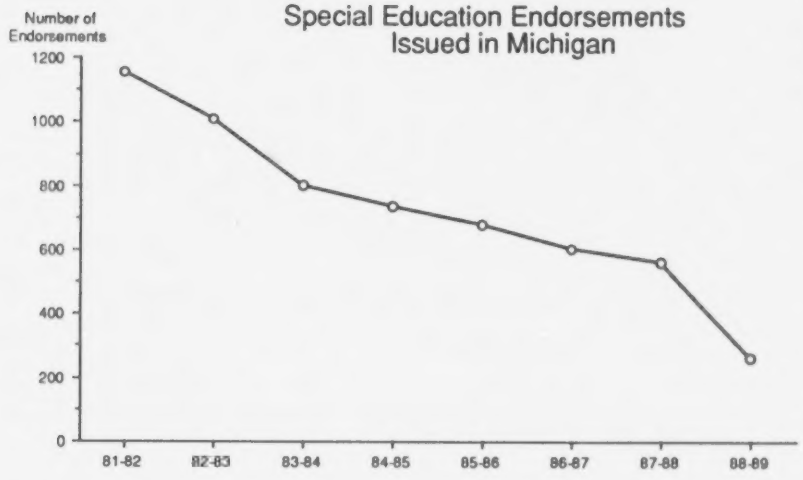
Each year, the National Center for Education Statistics (Geiger, 1988) gathers data on the numbers of bachelor's, master's, and doctoral degrees conferred in various disciplines. An analysis of this data in the field of special education from the 1980-81 to 1985-86 school years revealed the following:

- There was an uninterrupted decline of 35.5% in the combined number of bachelor's and master's degrees conferred in special education during the years of the study. The number of bachelor's degrees dropped by 5,578; the number of master's degrees by 4,089.
- Dramatic losses have occurred in the number of degrees granted in the area of physically handicapped. In 1986, 59% fewer bachelor's and master's degrees were awarded than in 1980.
- The area of mental retardation experienced a similar dramatic decline of 56%.
- Losses of nearly 50% were reported in the area of learning disabilities.
- In the area of visual impairment, there was a 67% decline in the number of bachelor's degrees conferred, but only a 35% decline in the number of master's degrees.
- Declines in bachelor's and master's degrees conferred in other areas were as follows: deaf by 36%, speech correction by 38%, emotionally disturbed by 42%.

Michigan has experienced a similar reduction. Since 1982, there has been an uninterrupted decline of 77.3% in the number of provisional certificates (endorsements) requested by IHE's and issued by the MDE.

- The most dramatic decreases have been in the area of LD. The number of endorsements issued in this area shows a 86.3% decline, from 95 endorsements issued in 1982 to 13 in 1989.
- Endorsements in the area of EI have dropped by 77.4%. The number of endorsements issued in 1982 was 310; only 70 were issued in 1989.
- The smallest decline in number of endorsements has been in the area of speech and language: 53.3%.
- The greatest number of endorsements issued continues to be in the area of MI. In the 1982 school year, 398 endorsements were issued; in 1989, 99 were issued. In Michigan, teachers endorsed in MI can teach in four programs (EMI, TMI, SMI and SXI) and can probably teach LD programs when no other teachers endorsed in that area are available.

It is important to note that the number of endorsements issued by MDE cannot be equated with the actual number of individuals who graduate; although, the number is fairly close. A few universities have graduates that are issued dual endorsements (usually MI and EI). However, this practice has been decreasing over the past couple of years because of increased graduation requirements. See selected data tables.



Teachers trained in Michigan are the best source for new assignments and could probably be effectively increased but only with substantial effort.

Market Based Model

A market generated model uses staff newly assigned to the area of special education as the measure of identifying a need or supply. Some of the variables that affect a market generated approach include retention, retirement, recruitment, school reform movements, unfunded positions, certification standards, pre-service training, and emergency approved positions. Market demand is simply the number of funded positions. The most common definition of need in this model is whether existing positions are filled with certified (or emergency approved) teachers or remain vacant.

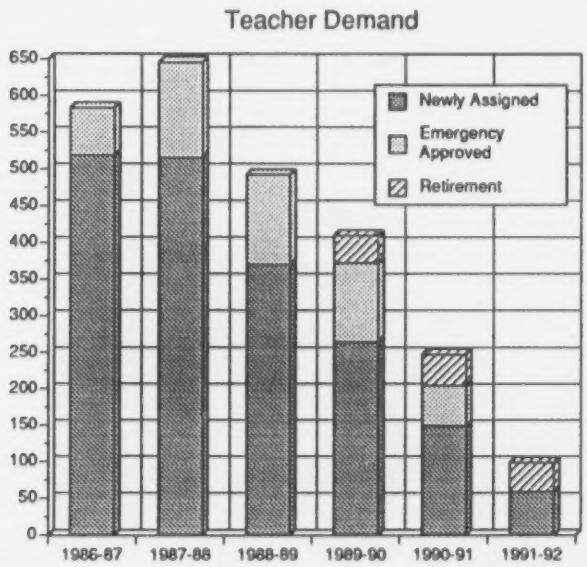
The market based definition can serve as a starting point for discussion of Michigan's workforce. It provides a benchmark for comparing need with supply. From a market based perspective, current need is the difference between the number of certified teachers filling funded positions and the number of funded positions. Typically, positions for which certified teachers cannot be found are filled with teachers who do not meet the certification requirements.

Nine variables can be used in this model to build the projection; however, only five were selected for purposes of this report because neither policy nor data were available on the other four factors. Projecting demand using a market based perspective is dependent upon the weight given to each of these factors:

1. **Newly assigned staff:** Data collected by the department in the area of newly assigned staff with no prior experience does not identify the reason why staff was hired. Was it due to retirement, new funding, attrition, an increase in the student population, etc.? However, this data provides a baseline to build teacher demand. This factor is weighted into the model.

2. **Emergency approved teachers:** While emergency approvals do not appear to be a viable source to address shortages, such personnel do reflect demand and continue to be a factor in the special education workforce. This will be weighted into the model.

3. **Retirement:** With the recent change in Michigan's teacher retirement bill to thirty years experience, it is estimated that there will be a slight increase in the number of teachers who will retire. While such retirement figures would usually be included with the number of staff newly assigned, this factor is given weight in this model because of the impact that the new retirement bill will have on teachers over the next three to four years as they take advantage of the new retirement options.

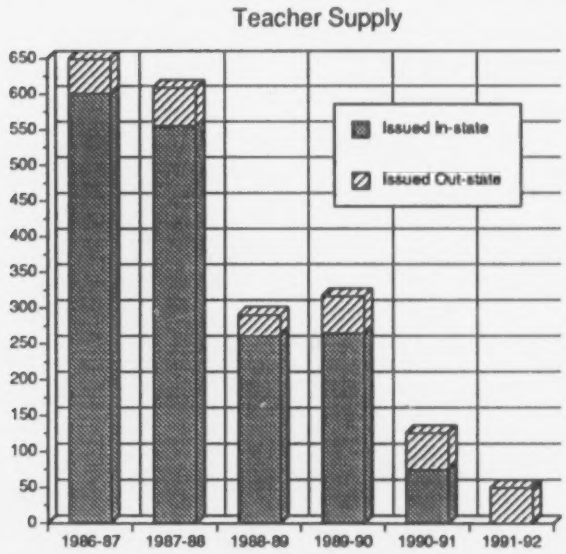


Projections: Using a linear regression formula, it is possible to project the demand for the above group of teachers over the next three years. Analysis shows that while the demand will continue, it will do so at a decreasing rate.

4. **Out-of-field teachers:** Although one variable relating to the large number of teachers in general education holding special education endorsements is known, no crossover is

expected in Michigan in the immediate future, so this factor will not be weighted. But more importantly, it could not be weighted due to the lack of data relating to the number of teachers who leave special education and the length of their absence. Neither can the employment history of recent graduates unable to find a teaching position in special education be secured. This single factor is critical to an accurate projection in this model.

5. **Teachers trained in-state:** The number of new endorsements issued in the area of special education has significantly declined since 1980. Furthermore, this decline may be even greater if one includes students who receive more than one endorsement at the time of graduation (see data tables). This factor will be weighted into the model.



6. **Out-of-state teachers:** The number of teachers recruited from out-of-state appears to be stable with a slight decline in recent years. This factor will be weighted.

Projections: Using a linear regression formula, it is possible to project a teacher supply based on the number of new in-state and out-of-state graduates over the next three years. Analysis shows that there is a slight increase projected for 1989-90 school year. However, if the three year projection holds true, Michigan will rely completely on out-of-state teachers in 1991-92.

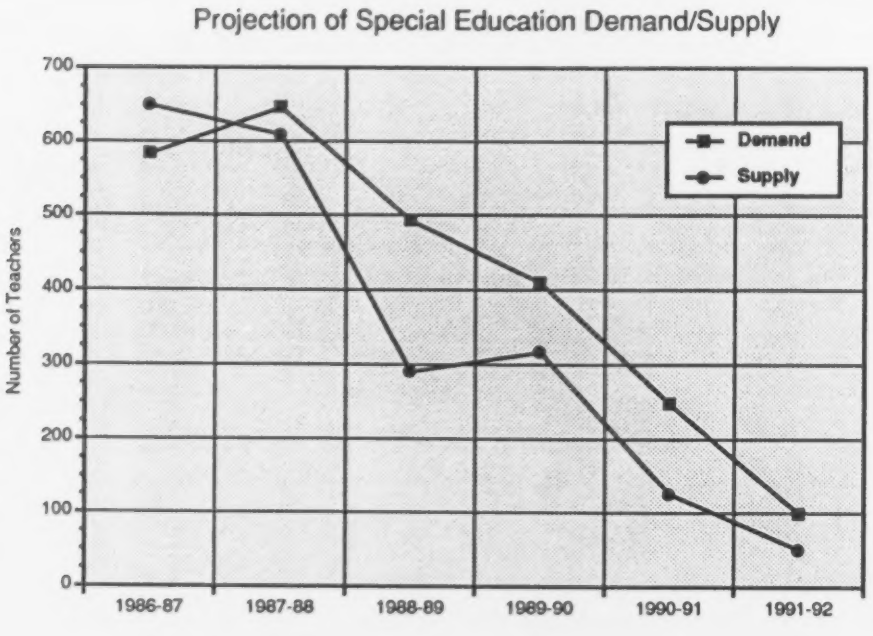
7. **Funding changes:** Michigan school districts rely very heavily on local funding. On a national average, 50% of funds for education come from state sources and 43.8% from the local district. In Michigan, 33.9% of the educational funds come from the state and 62.8% from local sources. Further, the added cost of funding special education has declined to 18.5% of the formula. It is difficult to determine how many unfunded positions in special education exist, whether new positions would be created if funding increased or if higher salaries would attract more professionals, particularly to rural areas. This factor could not be weighted into the model.

8. **Special education reform:** While policy is still being formulated relating to Michigan's REI and inclusive education issues, it is not possible to determine whether the movement of special education students into general education classrooms will impact the special education workforce. It is suspected that as students are placed into general education, the special education teacher would accompany them. This factor cannot be weighted into the model at this time.

9. **Program trends:** With the recent shift in service delivery towards resource rooms rather than categorical programs, the need for teachers to work in a generic setting will increase. While this factor is not weighted into the market based model because of the lack of endorsements issued to resource room teachers prior to 1987, some estimate of need can be established using the prevalence model.

Based upon these weights, the demand and supply of special education staff in the state can be projected. The market based model shows that both demand and supply will decline. However, the demand will exceed the supply over the next three years by as many as 100 staff per year. While all of these factors may be quantifiable, the relative weight given to each factor needs to be more precise as to the number and type of positions in need.

A problematic concern with this model is that it is not sensitive to teacher surplus. Over the last three years, not all graduates from IHEs have been able to secure employment in the Michigan teaching profession. If this surplus still exists, then the demand over the next three years would not exceed the supply by as great a number as the model projects, if at all.

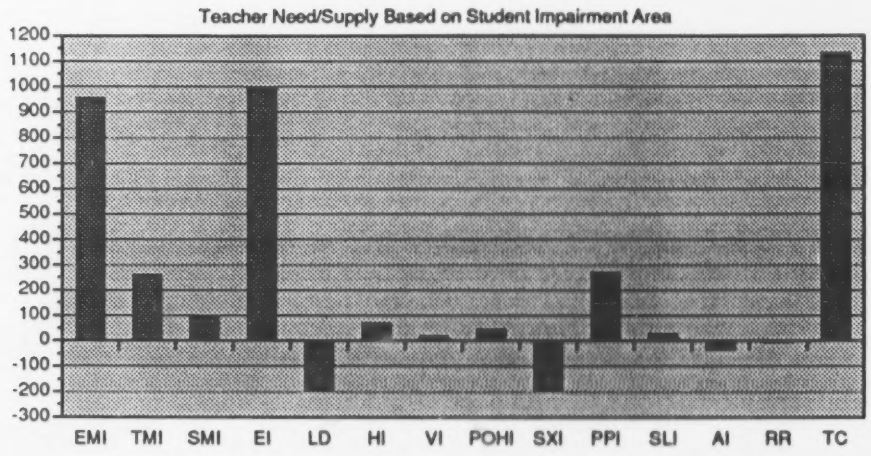


The two factors used in this model to determine supply were graduates from in-state and out-of-state universities. The model could not account for the number of teachers seeking employment (active reserve pool), on leave (inactive reserve pool), or crossing over from general education (transfer). Furthermore, the market based model depends on personal judgement in terms of the degree of weight each factor is given. Relative values placed on each factor will change the outcomes of the regression.

Prevalence Model

Need from a prevalence based perspective is the difference between the number of certified teachers employed and computed demand. Demand is equal to the number of handicapped students divided by the teacher/student ratio. From a prevalence based perspective, demand is determined independently of the number of positions funded. The issues of current uncertified employees or vacancies are not relevant. Using the perspective of a prevalence model, a need or surplus of teachers relative to a derived demand can be determined.

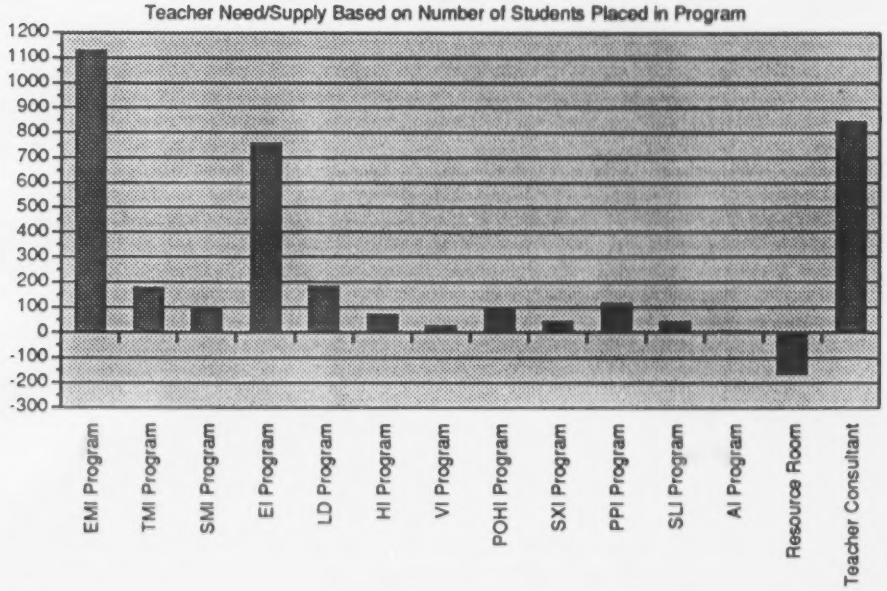
The following charts were developed using two different approaches. The first chart views teacher need/supply based on the number of students by impairment area and the number of teachers endorsed by impairment area. The second chart is based on the number of different handicapped students placed in the same special education program and teacher figures calculated by FTE.



Both charts use the maximum teacher/student ratio allowed for that program as required in the Michigan rules (see selected data tables). Using these figures, one can project the staff needed to teach each area of handicapped students.

When the actual number of teachers by impairment area is used there are staff shortages (displayed by negative bar's) in the areas of LD, SXI, AI, and RR. The other areas remain in a positive state, especially the areas of EMI, EI and TC.

Even though Michigan's delivery system is oriented towards categories, students are not placed in programs based on impairment area but on need. It is likely that one will find LD students being served in many program arrangements. For this reason a second approach is used based upon the numbers of students receiving services in each categorical program (rather then impairment area) as well as the number of the teachers by FTE. This approach presents a more accurate picture. It is also possible to factor the number of deviations that were allowed by MDE into this approach. Deviation's are variances to administrative rules, and in this instance would allow the class size in a special education program to exceed the maximum teacher/student ratio required by rule.



In the 1988-89 school year 192 deviations were granted to programs to exceed there maximum caseloads.

In general, teachers' caseloads increase as a school year progresses and in 1988-89 this appeared to be true. During the second semester 136 of the 192 deviations were granted. The majority of these were in the area of LD. Michigan had 12,201 special education teachers during the 1988-89 school year. Assuming that each teacher represents a special education program then class size deviations were granted to only 1.6% of Michigan's classrooms. This percent does not appear to be significant enough to factor into this approach.

When this second approach is used, the outcome shifts dramatically. While the supply of staff remains constant, the only shortage that appears is an increased shortage in the area of RR. The number of LD teachers shifts from a shortage to a surplus because LD students are more evenly distributed throughout the delivery system and served by teachers with endorsements in other areas.

When substantial changes are expected in the numbers of students in a particular impairment area, anticipating those changes allows for the development of strategies to meet the needs. For example, using this same methodology and increasing only the area of LD by 1,800 students each year for three years (the existing rate of growth), one finds a significant need for LD teachers by 1991-92.

	Number of Students	Max by Rule	Projected Demand	Calculated Staff	Need/ Supply
1989-90	25530	15	1702.0	1,886.1	184.1
1990-91	27330	15	1822.0	1,886.1	64.1
1991-92	29130	15	1942.0	1,886.1	-55.9

One of the problematic concerns with this model is the unrefined nature of the analysis. This model provides the broadest statewide needs and is not sensitive to particular regions of the state. Also, it cannot distinguish rural vs. urban needs. Certainly, some geographical areas gain teachers at the expense of other areas which may also reflect the quality of service delivered in the district where higher teacher turnover occurs.

Data Elements

Concerns relating to the need/supply of special education staff have been urgent enough to receive national attention. The lack of qualified staff was recently recognized by the U.S. Congress in its reauthorization of the Education of the Handicapped Act. One of the few new proposed additions to the Act will require each state to maintain a system to determine on an annual basis the number of personnel and project those needed over the subsequent five years. This includes activities the state will use to ensure an adequate supply of qualified personnel and tracking enrollments of graduates from IHEs.

Such legislative action would favor the establishment of a national uniform procedure for collecting state data relating to personnel. The file structure of the data that is requested in this reauthorization will determine the quality of the questions relating to the workforce that can be answered. To maximize the value of a national personnel database the same meaning for each record is needed to prevent the common problems that arise in state to state (mis)interpretation. An initial standardization of personnel data elements is essential to prevent later disruption through redefinition of the contents of a personnel database.

The personnel data elements necessary to develop the workforce models similar to this study include:

- Birthdate
- Years of experience in education
- Area(s) of special education endorsement (major)
- State's teacher/student ratio

Special education program or service assignment
Level assigned (elementary, middle, high school)
Number of staff newly assigned
Current number of teachers employed by impairment area
Number of emergency approvals issued by impairment area
Reason for leaving the teaching profession
Reason for returning to teaching
Length of time on leave

The student data elements necessary for a national database include:
Impairment area
Program placement

Additional elements that would lend precision to a workforce study include:
Type of teaching certificate (K-6, secondary)
Level of degree (BA, MA, etc.)
IHE issuing degree
Salary
Sex (student and teacher)
Ethnic group (student and teacher)

Resources for the above data elements can be found in a variety of locations. In this study data was obtained from: teacher certification reports, data collected on December 1st, insurance companies, annual congressional reports and private corporations.

Discussion

Special education in Michigan has been fortunate in that it has not yet experienced the wide teacher shortages that have appeared in other parts of the country. As a state, Michigan appears to have a large number of well trained staff. Michigan IHEs are major producers of educators both nationally and for the state. However, Michigan does have reasons for concern. The teaching profession is not as attractive as it once was as noted in the Kappan report. If the trend of fewer special education endorsements continues to decline Michigan must anticipate shortages in the workforce.

Literature indicates that there are two general solutions to the problem of decline in the teaching profession. Districts in Michigan must begin to examine these proposals.

1. **Train more teachers to enter the field.** While this solution appears easy to implement, it involves two complex features.

   The first solution involves the modification of existing teacher training programs. Skrtic (1987) found that the current special education movement is creating expectations for another reform in the absence of a guiding theory of the overall structure of the educational system's capacity to respond to the reform. Shanker (1990) successfully argues that the existing traditional structure of education has reached its limits to educate, and that neither greater efficiency nor equity can be attained from a system based on a factory model. The paradigm shift that must occur at the teacher preparation level is an understanding of the institutional/industrial nature of the educational system. One only needs to review a typical training agenda to recognize that it is dramatically different than what is needed to serve the emerging student population. The standardization of skills taught to perspective teachers are a repertoire of traditional approaches that can be applied to predetermined situations. However, the manner in which a teacher applies this training is no longer the standard needed by an educational structure struggling to be more responsive to a rapidly changing school and society.

Second, attracting individuals to the special education profession is more difficult to accomplish. With teacher preparation programs already enrolling fewer students, special education will have to compete for increasingly limited resources. It is well known that education has been the financial stepchild to business and management occupations. Even at the university level, special education programs have become less valued as institutions shift their emphasis to research, applied science, and high-tech fields. If the traditional model of teaching persists, the appeal of the profession will continue to tumble.

2. **Retain the current number of teachers by reducing the level of attrition.** This is a complex solution since the overall quality of the educational environment would need to be improved.

   National studies suggest that those educators who are dissatisfied with teaching leave within the first five years. This may indicate a failure of the profession to socially integrate new teachers into the profession. Chapman's (1983) research indicates that social integration factors such as isolation from adults, infrequent interchanges with peers, and lack of collaboration all contribute to teacher attrition. In many cases, there is a single special education teacher in a school building; thus, social professional isolation of the special education teacher may be a significant factor in the high attrition rates of younger teachers.

   Other frequently cited factors are an excessive amount of paperwork required of special educators, a perception that special educators receive little acknowledgment among other staff or administration within the district for the intensity of their assignment, increasing difficulty in obtaining parental cooperation due to greater volatility within families, and the increasingly complex types of services special education personnel are being asked to provide. In addition, teachers with experience in special education are highly sought after for regular class assignments.

Studies of the special education workforce are essential, however, they always raise more important questions that relate to the quality of staff.

Special education in Michigan can be seen as a progression through three phases: from ideology to policy to practice. What started as an ideological mission in the decade of the 70's moved to regulation in the 80's; in the 90's, special education in Michigan will focus on effective practices. While the goals of the first decade were ones of concept formulation and exploration, the issues of the last decade were those of equity and compliance. So the focus of this decade will be on the quality and excellence of its professionals.

As Michigan's programs and services have grown and changed over the decades, so has the nature of special education teachers hired by school districts. In the 70's, teachers with strong classroom methodologies were in demand. This decade will require a more versatile professional who can develop cooperative models that will deliver instruction in alternative education settings. As special education teachers develop more effective partnerships; perceptions of special education teachers will change. Instead of being deemed the expert, the role of the special educator will be viewed as a collaborator. In school settings, the professional best able to resolve a particular educational problem will do so. Collaborative models are different from existing consultation approaches in that consultation continues to maintain dependence on a specialists for problem solution and thus transfers ownership away from the classroom teacher (Pugach & Johnson).

Understanding with regard to special education has grown over the decades to embrace a greater portion of the handicapped persons life span, a wider range of handicapping conditions, and the importance of support during the transitional phases in a student's growth. It is unfortunate that general education has not been a partner to this evolution. However, this decade will reflect a deeper understanding of the enigmatic topics that enthusiasm and regulation alone have not

resolved. One of the major issues that advocates will face this decade is the possibility that existing special education regulations may have exceeded the administrative capacity to implement them. Furthermore, advocates will find that issues relating to quality staff cannot be promulgated. Excellence in teaching depends on the educator's inner capacities, abilities, and willingness to transcend–personal skills and behavior that cannot be quantified into regulations. Attempts to build regulations based on concepts of quality may be nothing more than generating a wish list.

To help achieve programmatic excellence, MDE must focus its resources on issues that pull together alternative delivery systems, improve curriculum by identifying student outcomes, retrain existing staff in new service delivery models, redirect teacher preparation programs and build visions which will lead to social change through a collaborative exchange of information.

Conclusion

The three-fold purpose of this study was to test the adequacy of a proposed national model designed to assist states in studying their workforce, to use available Michigan data for workforce projections based on the national model and to propose prerequisite elements essential for statewide data collection and analysis of a states special education workforce. This third purpose being of high national concern due to the immediate need to determine and disseminate a file structure that can be used as a national personnel database.

Conclusions can be drawn that relate to the adequacy of the models proposed by Smull and Bunsen (1989) and the need/supply of the special education workforce in Michigan.

There is always difficulty translating theoretical models to practice. The experience of applying models to reality rarely proceeds in a pure fashion. Even though refinement is needed in identifying and selecting accurate data and applying appropriate analysis, the market based model and prevalence model provide a stable structure for State Education Agencies to use to determine the need/supply of their workforces.

Most importantly, it can be concluded from the study that Michigan is at a point where need and supply are closely matched. Within the next few years, Michigan will begin to feel teacher shortages in special education that the rest of the country has already experienced. There are valid reasons for concern over the large yearly decline in the number of special educators being prepared across the country as well as national retention rates in special education which are nearly double the rate of personnel in general education.

One of the weaknesses that was found when applying Michigan's data to these models was the question of teacher surplus. If Michigan hopes to provide quality programs during this decade, the state must have well trained staff. It must also have precise measurement to enunciate the staff needed to implement new models as well as determine if enough staff are being prepared. Data must become available for more accurate projections, thus, three areas need immediate attention.

1. An initial study is needed to determine the size of the special education teacher surplus, if any. How many graduates remain unemployed or work in another profession until a vacancy in special education occurs, and for how long? What are the credentials of this pool? What impact will the merger (REI) with general education have on this surplus? These questions lead to the second area.

2. A second in-depth study of attrition/retention is necessary. What are the characteristics of personnel staying and leaving the profession? When do they decide and on what factors are their decisions based (salary, status, more desirable occupation)? What initiatives would bring teachers into the profession or help retain them? What is known about the career paths of those who stay? Do differences in rural and urban areas exist?

3. The third area that needs to be addressed is training. What is the number of students currently enrolled in special education preparation programs? What impact will five-year programs or new administrative requirements have on enrollment? What is the caliber of trainees and do trainees remain in special education after they have started? Are the endorsements provided by universities relevant to the current movements in the field?

Lastly, the study only assessed teacher need/supply. Further studies are essential for special education support and ancillary staff.

The vision of special education in the decade of the 90's will be influenced by an understanding of the needs of handicapped students in relation to students in general education. As programmatic quality is translated into reality, Michigan will be faced with identifying the outcomes attained by handicapped students as they move through the whole system. As more attention is placed on the quality of personnel, the whole educational community will be forced to reevaluate its purpose and goals.

TOPICAL ISSUES

Special Education Synopsis

The following analysis provides a **general overview** of special education in Michigan. Available information supports four conclusions. First, although Michigan has a large handicapped population when compared to other states, its percent of handicapped students is below the national average. Second, Michigan is a major producer of educators for the nation. Third, student ratios by impairment area are similar to national student ratios. Fourth, probably the most perplexing question raised by this investigation: Why is special education in Michigan still in an implementation mode? Handicapped student enrollment has been stable over the past four years, yet the constant growth in special education personnel suggests that there are unidentified factors creating the need for staff to provide service to some populations.

Rules in Michigan mandating programs and services for all handicapped students were implemented in October of 1973. These rules required baseline personnel data and forced more accurate collection techniques, mostly for funding purposes. The first reliable data relating to the teacher workforce became available in various formats in the 1974-75 school year and was supplemented in 1977-78 after the enactment of PL 94-142. Despite the availability of data, Michigan has never conducted a thorough analysis of its teacher workforce. However, Michigan is not the exception. The Educational Testing Service (1988) found that few states are gathering the type of data necessary to determine supply and quality of new personnel training programs, or developing state policies that impact teacher need or demand.

State Rank and Percentages: Michigan, which ranks 9th in the nation in terms of the size of its handicapped population, had 166,619 handicapped students in the 1988-89 school year. California and Texas ranked first and second in handicapped student population. Thus, Michigan is one of the nine states that together contain *half* the handicapped population in the nation. The remaining 45 jurisdictions contain the other half. Within these nine states, policies relating to funding, legislation, and quality of personnel influence *half of the nation's handicapped students*.

However, when Michigan is compared to its midwest neighbors as well as other east coast states that are ranked higher in student enrollment (ages 5-17), Michigan has the lowest percent of its population identified as being handicapped: 10.21% (Decision Resources Corporation, 1989).

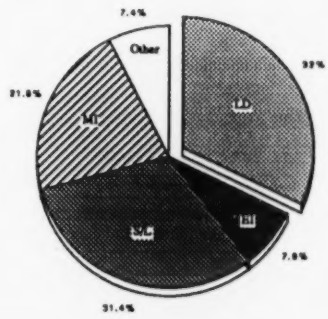
Training: Universities in Michigan have very successful training programs for educators, i.e. K-12 teachers, counselors, administrators, etc. In 1988, five Michigan universities were among the top ten in the nation in their total productivity of educational certificates. (Annual Directory, 1989)

Eastern Michigan University	2,603
Michigan State University	1,993
Wayne State University	1,939
California State University-Fresno	1,793
West Virginia University	1,771
California State University-Los Angeles	1,671
Western Michigan University	1,621
Central Michigan University	1,569
Boston College	1,517
San Francisco State University	1,461

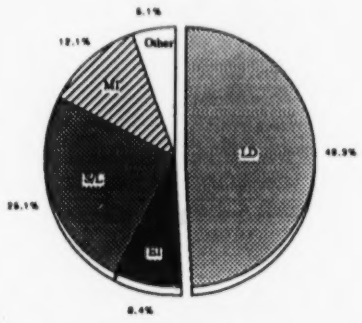
This implies that Michigan (along with California) is the major producer of educators for the nation. Also, that Michigan has a highly trained teacher workforce.

Student Ratios: The ratios among impairment areas in Michigan are similar to those at the national level. Since the 1978-79 school year (when data became available with the implementation of P.L. 94-142), the LD population has increased by 17% both nationally as well as in Michigan. However, a notable difference is that nationally, the LD population makes up 49.3% of the

National Student Population
1978-79

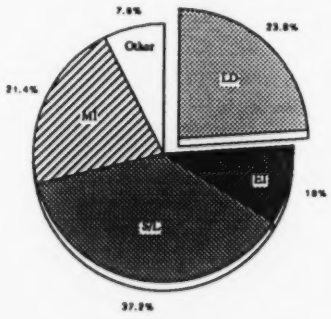


National Student Population
1988-89

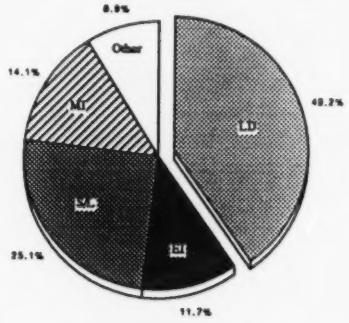


total population; in Michigan, the figure is only 40.2%. While ratios in both the areas of MI and S/L have decreased, since 1978-79 the decline in the S/L population in Michigan has been twice that of the national ratio.

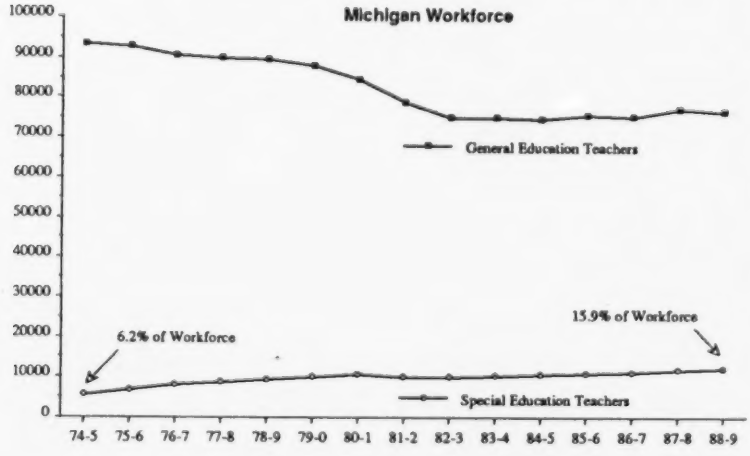
Michigan Student Population
1978-79



Michigan Student Population
1988-89

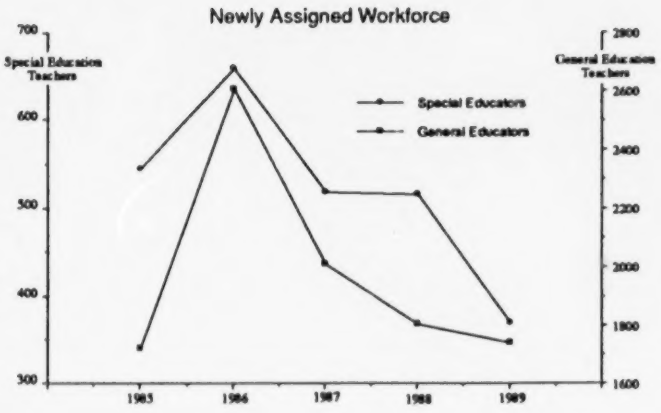


Michigan Workforce: Michigan's educator workforce in 1988-89 consisted of 98,987 professionals which included 12,201 special education teachers. The general education teachers workforce has been in decline since the 1974-75 school year; however, the steepest decline occured between 1980 and 1983 when Michigan had a deep economic recession.



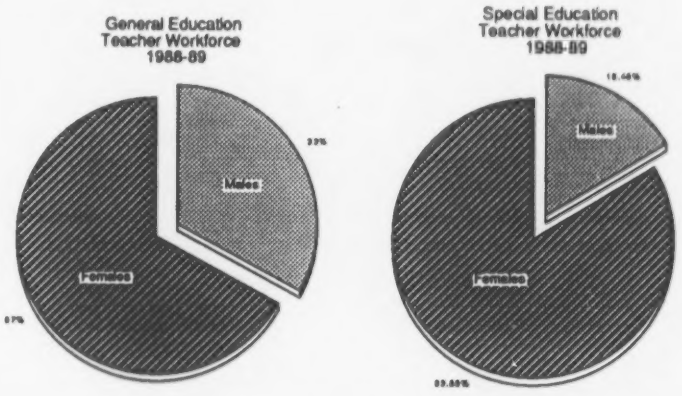
Special education also experienced a decline in personnel during this recession, but over the fifteen year period, the percentage of special education staff has increased from 6.2% of the total workforce to 15.9%. Over this same period, the percent of handicapped students has increased from 7.1% of the student population to 10.67% in 1988-89.

Even though the number of professionals in general education has been declining since the early 70's, from 1985 on, the number of staff newly assigned (with no prior experience) in both general and special education show similar trends. The impairment areas with the greatest number of new teacher assignments in 1988-89 were: mentally impaired (117 new assignments), followed by emotionally impaired (with 106), and learning disabled (68). The total number of staff newly assigned were 370.



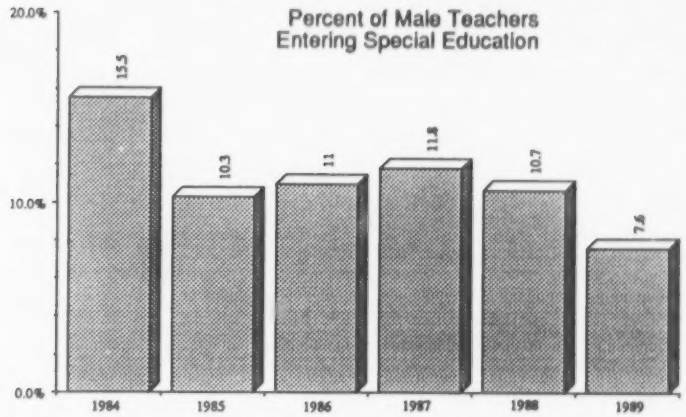
Personnel Gender Ratios

The following analysis focuses on **personnel gender ratios.** Available information supports six conclusions. First, special education does not attract males to its workforce as easily as it attracts females. Second, those males who are attracted to special education tend to favor specific impairment areas and teaching levels. Third, while the total number of special education teachers in Michigan has increased over the last three years, the increase has not been evenly distributed over all impairment categories, teaching levels or gender. Fourth, age, years of experience, and educational degree impact the salaries of male and female special education teachers. Fifth, there are staffing incongruities between the elementary and secondary level delivery system. Sixth, the paucity of personnel from minority groups limits significant comparisons to personnel gender ratios among non-minority teachers.



Data over the last three years has shown that the percent of male teachers in general education has remained unchanged at approximately 33%. The number of males in special education make up only 16.5% of the special education workforce. Special education does not appear to be attracting males.

Since 1984, the number of male teachers who entered special education in Michigan has been declining, from 15.5% of the special education workforce to 7.6%. Not only are fewer males entering the profession, but those that do have specific categorical preferences. Male teachers tend to prefer the areas of TMI and EI. However, over the last three years, only one male has been newly assigned to the area of TMI. Each of these areas consists of 23% male teachers, compared to the area of HI where only 6.7% of the teaching staff are males.



Since 1975, the percent of males teaching in almost every impairment area (except TMI and POHI) has declined. The percentages are as follows:

	MI	S/L	LD	TMI	EI	POHI	H/H	VI	HI
1975	27.00	27.00	13.95	21.62	27.94	12.94	18.67	21.69	15.49
1989	20.33	9.16	12.15	23.48	22.77	14.74	13.10	15.03	6.71

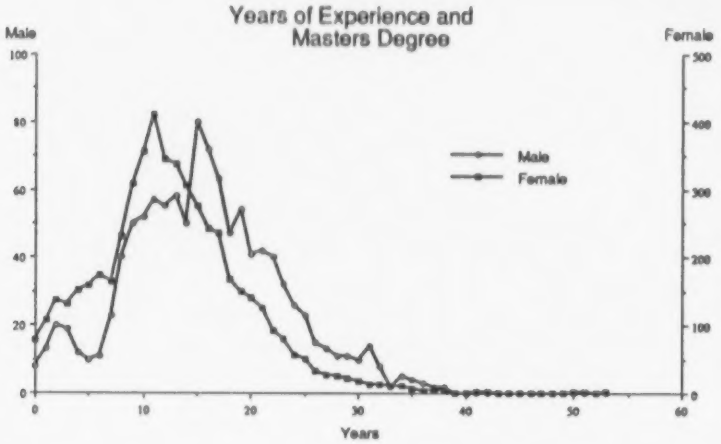
Male teacher consultants average the greatest number of years experience: nearly 20 years . Staff with the lowest number of years of experience in 1988-89 were females in the area of AI (average 6 years experience) and EI (average 9 years experience).

On a national scale, Michigan ranked 36th in percentage of women employed in 1989. Despite this low national ranking, the special education teaching profession continues to be attractive to females. There may be two reasons why this is so. First, two incomes are virtually essential today for couples seeking a middle-class lifestyle. Second, single females, who are raising 26% of Michigan's children, may view teaching as a field with easy access as well as hours conducive to rearing children.

This pattern of decreasing male attraction to special education persists in the field of male psychologists entering the workforce as support personnel. The highest percent of males in a special education support area was in the area of school psychologists: 44%. Even this figure is down from the 58% reported in the 1974-75 school year and only 35% of the new psychologists who entered the field in 1988-89 were males.

As expected, the number of years experience has a direct relationship on salaries. Males working as teacher consultants average $40,389 per year. This is followed by male POHI teachers who average $39,301 per year. The lowest average salaries are received by female AI teachers who average $29,562 per year. In special education, males average about $4,000 more per year than females. These salaries are above the national average of $28,584 (Gerald, et.el.).

There is not as great a discrepency in general education salaries. The average salary for all male educators in Michigan is $35,963 per year; male educators average only $2,754 more than female educators, however, years of experience account for this difference.



In addition to age and experience, formal training also impacts salaries. A greater percent of male teachers hold higher education degrees than females. There are fewer male teachers than female teachers with bachelor's degrees and more holding graduate degrees. This same pattern is true when one compares special education administrators to teachers . The percent of administrators, as a whole, holding master's through doctor's degrees is greater than teachers.

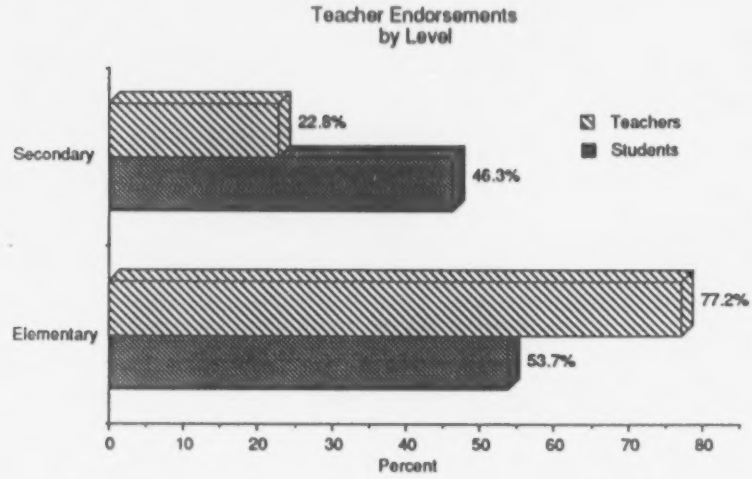
	Bachelor's	Master's	Specialist's	Doctor's
Male Teachers:	32.7%	62.1%	3.6%	1.6%
Female Teachers:	43.7%	54.9%	.9%	.5%

	Bachelor's	Master's	Specialist's	Doctor's
All Special Ed Teachers:	42.0%	56.0%	1.3%	.7%
Special Ed Administrators:	5.2%	71.8%	11.5%	11.2%

The total number of special education teachers in Michigan has increased by nearly 1,000 over the past three years, from 11,240 teachers in 1986-87 to 12,201 in 1988-89. The largest number of newly assigned staff were to the elementary level (142 teachers), the smallest number to the senior high level (40 teachers). The greatest percent of staff newly assigned to special education over the past three years was in the area of EI which was as high as 7%. An unusually high

percentage of AI teachers (13.0%) were newly assigned to the workforce during the 1987-88 school year. The area of MI also continues to be an area for many newly assigned staff.

In 1987, Rule 340.1782 was modified to include requirements that by the beginning of the 1990 school year, every special educator must hold an endorsement at the level they teach. In the 1990-91 school year, teachers working at the elementary or secondary level will need to be endorsed either at the elementary or secondary level. This presents a particular problem. The handicapped student population at the elementary level is very similar in percentage to the handicapped population at the secondary level: 53.7% of the population is between the ages of 0 to 11 and 46.3% of the population is between the ages of 12 and 26.



However, 77.2% of Michigan's special education staff are certified at the elementary level and only 22.8% hold secondary certificates. With 46.3% of the student population at the secondary level and only 22.8% of the staff certified at that level, some adjustments will need to be made.

In addition, males prefer to teach at the high school level. The largest percent of males in the areas of MI, SL, LD, and EI teach at the senior high school level. The largest percent of males in the areas of POHI and VI teach at the junior high/middle school level. The largest percent of males in the areas of HI and AI teach at the elementary level.

Hodgkinson (1989), found that Michigan schools reflect the state's low level of ethnic diversity. Michigan's youth population (under 21) is below the national average in diversity. In 20 years, almost 40% of the nation's youth will be non-white. Michigan's non-white population will increase from 23% to 29%. The ethnic minority in special education is 20%, so some increase is anticipated.

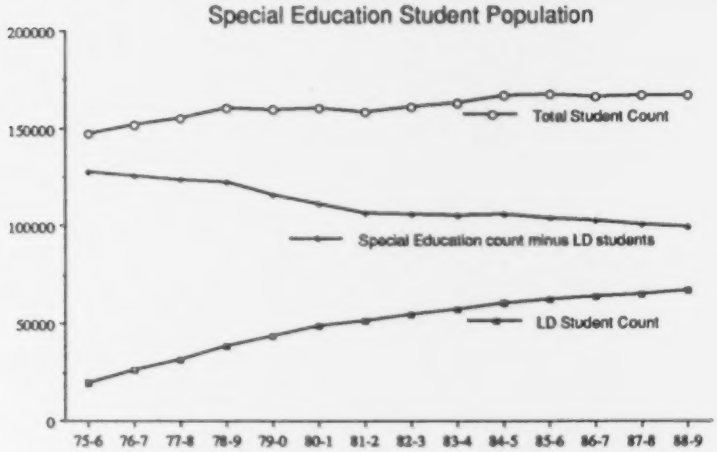
Percent of Ethnic Diversity

	American Indian	*Asian*	*Black*	*Hispanic*	*White*
Male	0.1%	0.5%	7.2%	0.2%	92.0%
Female	0.3%	0.2%	11.4%	0.4%	87.8%

There is very little information relating to the percent of minority teachers in special education or their retention. Louis Harris & Associates (1988) found that of the 34% of the teachers who indicated they would leave teaching within the next five years, 25% were white teachers and 41% were minority teachers. A report from the National Center for Education Statistics (1988) found that the southern region of the country had the greatest percent of minorities at the teaching level: 21%. This was followed by the western region (12%), midwest (9%), and northeast (7%). Michigan's percentage of minority special education staff is similar to the midwest average. Eight percent of Michigan's male teaching staff and 12.2% of the female teaching staff are of ethnic minority.

LD Teachers

This analysis focuses on **teachers** who serve students with **learning disabilities.** Available information supports seven conclusions. First, the learning disabled student population continues to increase. Second, males comprise a large percentage of the LD student population. Third, LD students enter the delivery system at an older age. Fourth, the number of staff assigned to the learning disabilities area exceeds the number assigned to other impairment areas. Fifth, the number of teachers assigned to LD programs is greater than the number of LD teachers trained. Sixth, the possible responses to the LD staff shortage are granting temporary approvals, emergency approvals, out-of-state teacher recruitment, and allowing MI trained teachers to work in LD programs. Seventh, the shortage of teacher consultants in the LD area is adjusted by adding LD students to the caseloads of other TC's.

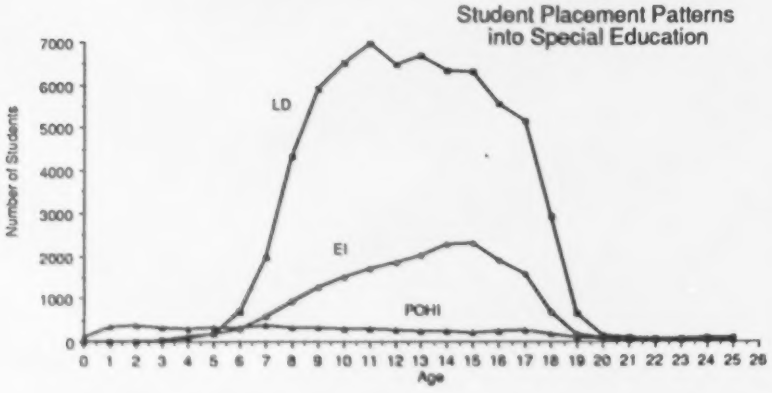


To put the LD teacher workforce in perspective, a quick overview of the trends in the area of LD is necessary. The special education population in Michigan has grown from 116,261 students (or 7% of the population) in the 1974-75 school year to 166,619 students (or 10.7% of the population) in 1988-89.

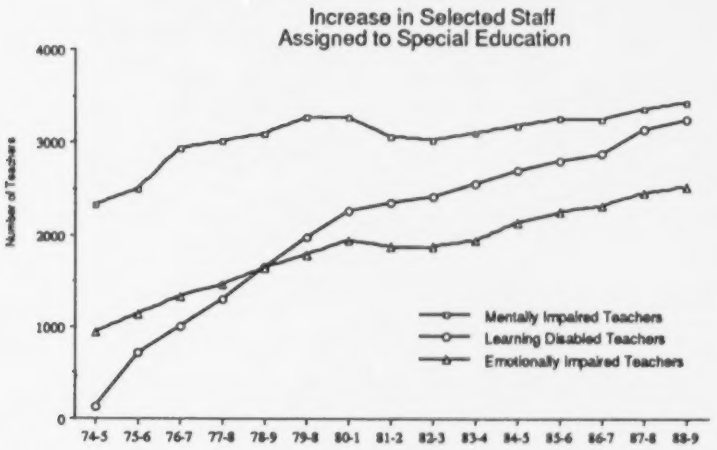
This growth appears to be solely attributed to student growth in the area of LD. In 1975-76, the LD population was 19,741. This number grew to 67,244 in 1988-89. During this same time period, the number in all other impairment areas combined declined from 127,700 students to 99,375. In the 1988-89 school year, the special education population, as a whole, grew by 45 students, yet the LD population grew by 1,856 students.

Nuttall (1988) reported that the LD population consists of a very high percentage of male students: 72.4%. The only impairment areas reporting higher male populations in Michigan were EI, with a 78.2% male enrollment, and AI, with an 82.5% enrollment.

The pattern of LD student entrance into special education is different than the pattern for other impairment areas. For example, POHI students are identified as being handicapped at age 0-1 and the population shows little increase or decrease until the ages of 19 and again at 26. On the other hand, the EI student population shows a gradual increase in identification rates beginning at age 5 and peaking at age 15. EI then shows a rapid decline to age 19. The difference in the area of LD is that entry into special education as an LD student shows a marked increase from age 6 through age 9, a peak at age 11 with a rapid decline between ages 17-20. Few LD students remain n the system until age 26.



It is interesting to note that EI and LD students leave the educational system at a later age than their general education peers. This is because 75% of all handicapped students are one year older than their peers at the same grade level (Wagner, 1989). This is probably due to the large percentage of handicapped students who are retained during their K-12 matriculation. Both LD and EI students start to leave the system at age 15. This is similiar to national trends which show that beginning in the 8th grade, 20% of the handicapped population drop out per year.



Of the three areas that have the greatest number of special education teachers assigned (MI, EI and LD), all three have shown a continual increase in staff. LD has shown the greatest increase in the overall number of staff assigned. However, the percent of LD teachers assigned each year over the past three years has been greater than the number of LD teachers being trained.

For example, during the 1988-89 school year, 61 teachers were assigned to the area of LD, while only 37 teachers were issued LD endorsements the previous year. This is a 165% placement rate. In 1987-88 the placement rate was 307%. What appears to be occuring is that teachers trained in other areas of special education are being assigned to teach LD. For example, in 1988-89 the rate for newly assigned MI teachers was 53%; it's likely that a high percentage of the remaining teachers trained in MI were assigned to LD programs.

In situations where the demand for LD teachers exceeds supply, either out-of-state, emergency or temporary approvals are sought.

In 1988-89, LD had the highest number of out-of-state recruits: 375. This is followed by MI (321) and S/L (221). The number of LD staff recruited from out-of-state institutions as well as emergency approvals in the area of LD have increased steadily. Emergency approval in the area of LD is also the most frequently issued certificate on the national level.

Source of LD staff

	1985-86	*1986-87*	*1987-88*	*1988-89*
LD staff: out-of-state	285	307	352	375
LD staff: emergency approved	6	18	40	47

Temporary approvals are issued to existing special education staff who wish to transfer from one impairment area to another area in which they plan to become qualified. For example, if a teacher trained in the area of MI wished to work in an LD classroom, a temporary approval would be issued while the additional course work in the area of LD was being completed. Continuing approvals cannot be considered an indication of need since these teachers are already endorsed and in the workforce. However, this does reflect an urgency for teachers in the area of LD.

The total number of temporary approvals issued in the 1988-89 school year was 214. The greatest percent of these were in the area of LD: 63%. In addition, 166 temporary approvals in the area of LD were continued from the previous year. Eastern Michigan University requested the greatest number of continuing approvals for its LD teachers: 104. Western Michigan University requested the second largest amount: 46. The next highest area where temporaries were issued was the area of EI with 59 approvals. When sufficient LD teachers cannot be secured, then either emergency approvals are sought or teachers from out-of-state are recruited.

Approximately 88% of Michigan's LD students are educated in general education. To assist these students, Michigan has established a position called teacher consultant. A teacher consultant in Michigan needs three years experience, a master's degree, and competency training. The pattern for teachers in categorical areas other than LD working in LD programs is also true in the areas of teacher consultant services. When the caseloads of teacher consultants are reviewed, it can be seen that both MI TC and EI TC have large numbers of LD students on their caseloads.

MI TC serve caseloads comprised of 63% LD students and 8% EMI students.
EI TC serve caseloads comprised of 47% LD students and 43% EI students.
LD TC serve caseloads comprised of 84% LD students.

However this same pattern does not appear with low incidence populations where most TC's work with students in the areas in which they were trained.

HI TC serve caseloads comprised of 75% HI students.
VI TC serve caseloads comprised of 47% VI students.
POHI TC serve caseloads comprised of 71% POHI students.
PPI serve caseloads comprised of 41% POHI students.
H/H serve caseloads comprised of 46% POHI students.

The disproportinate number of LD students serviced by MI TC and EI TC suggests the need for this staff to be trained in the area of LD.

Higher Education Training

This analysis focuses on the impact of **institutions of higher education** on special education staff availability. Available information supports four conclusions. First, the majority of special educators trained in Michigan were trained in five universities (out of twenty-eight). Second, these five universities yeild very high placement rates for their graduates. Third, rules requiring more comprehensive competencies for students trained within IHEs have resulted in teacher preparation programs being offered by 12 institutions, a decrease from the 28 previously offering such training programs. Fourth, current teacher training programs emphasize categorical training of teachers. Such categorical training programs have serious implications for future availability of special education staff.

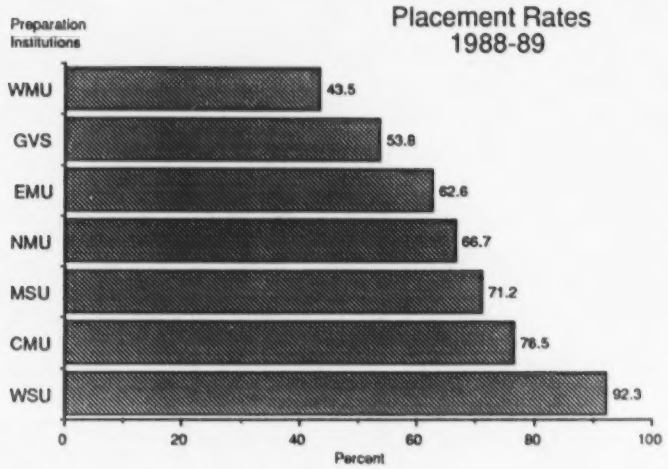
Five universities in Michigan trained nearly 70% of the teachers who taught in special education programs during the 1988-89 school year.

Central Michigan University - trained 13.0% of the teaching staff.
Eastern Michigan University - trained 20.6% of the teaching staff.
Michigan State University - trained 11.7% of the teaching staff.
Wayne State University - trained 12.8% of the teaching staff.
Western Michigan University - trained 10.8% of the teaching staff.

Further analysis can be provided by the program area where these teachers were assigned. For example; 18% of Michigan's teachers working in the area of mental impairment were trained by Eastern Michigan University. This was followed by 17% of the staff which were trained by Central Michigan University. The endorsement areas are as follows:

	Highest % trained	Second highest %
Mentally impaired	EMU - 18%	CMU - 17%
Speech and language	EMU - 18%	CMU - 16%
Learning disabled	EMU - 17%	WSU - 12%
Trainable mentally impaired	WSU - 22%	EMU - 21%
Emotionally impaired	EMU - 25%	CMU - 15%
Physically & Other Health Imp.	EMU - 36%	WSU - 19%
Homebound or Hospitalized	WSU - 26%	EMU - 20%
Vision impaired	MSU - 24%	WMU - 22%
Hearing Impaired	EMU - 36%	MSU - 18%

The rate of teacher placement of selected IHEs in Michigan have been determined for the 1987, 1988, and 1989 school years. This percentage was calculated by using the number of students for whom the selected universities requested endorsements and the number of staff that were assigned from those institutions the following year (see data tables).



The analysis of the 1988-89 year shows that WSU had the highest placement rate in Michigan.

Over the three year period, Wayne State University and Central Michigan University have shown the highest placement rates for their students in Michigan. In addition, it has been reported

that these five universities are among the highest producers of educational certificates in the nation. Several IHEs in Michigan report that they have 100% placement rates for their special education graduates who were enrolled in their programs. An assumption is that many students who hope to teach find employment out-of-state or enter the active reserve pool.

Rate of Placement in Michigan school districts:

	Highest placement	Second highest
1988-89	WSU (92.3%)	CMU (76.5%)
1987-88	CMU (93.8%)	WSU (91.2%)
1986-87	CMU (100%)	WSU (82%)

Since the 1974-75 school year, twenty-eight colleges and universities in Michigan have provided staff to deliver special education programs and services. In 1988, special education higher education training programs throughout the state were submitted to MDE for review based upon new state rules requiring more comprehensive student competencies. As a result of this appraisal, 12 institutions of higher education were re-authorized to provide training programs. These 12 institutions offer programs in the following areas:

LD: 12	VI: 4	POHI: 2
EI: 9	SL: 4	AI: 2
MI: 8	HI: 3	PPI: 2

While categorical grouping by impairment area provides discrete data to investigate the workforce, this categorical grouping is of questionable benefit to school districts who must meet broader programatic demands or to graduates whose marketability becomes less flexible.

The continuing emphasis in Michigan on categorical preparation raises problematic issues with student teaching. University staff have indicated that it is very difficult to locate categorical programs in schools because so many districts have moved to resource room programs that are multi-categorical. Thus, there are very limited numbers of 'pure' classrooms remaining for directed teaching experiences. This problem is likely to increase as special education merges closer with general education.

Furthermore, while most IHEs prepare teachers to provide direct instruction, this preparation does not include models of collaboration which have come into favor. The foundation for collaborative training is different than the foundation for traditional training. The two central features are the absence of a hierarchy and locating the power of decision making with teachers so that they feel more competent in dealing with existing and future student problems. Discrepancies between teacher training skills and those skills necessary for cooperative models creates different expectations, new role conflicts as the separate systems become one, and additional stress on an organization that responds slowly to change. As the effects of "ownership" are clarified and as special education is transformed from the "second" system to a total school responsibility, collaboration among teachers will be the most important element of teacher preparation and perhaps the critical component of effective service delivery this decade.

Special Education Administrators

This analysis focuses on distinctions among **special education administrators** in Michigan. Available information supports two conclusions. First, special education administrators as a group are older, more experienced, better educated, and higher salaried than both special education teachers and general education administrators. Second, female administrators in special education as a group fare better than their female counterparts in general education.

Special Education Administrators

	Age	Experence
Male	47.1	18.8
Female	45.4	17.4

There are two categories of special education administrators in Michigan: Director and Supervisor. The qualifications and roles of each vary. For example, Rule 340.1771 requires that special education directors attain 45 hours of graduate training which includes a 200-hour practicum. Rule 340.1772 requires that supervisors have 18 hours of graduate study but no practicum. Both areas require a master's degree, special education approval, and three years experience. In larger districts, it is typical that a director of special education would have two or three supervisors to help administer district programs and services.

When comparing special education administrators (directors and supervisors) to general education administrators, there are fewer holding bachelor's degrees and more with graduate level degrees.

General Education Administrators:

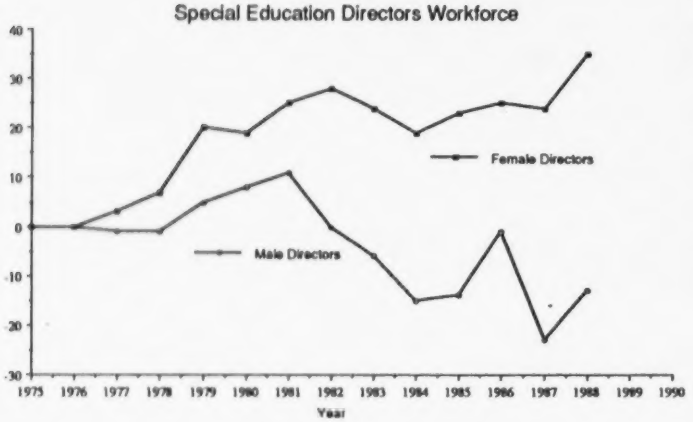
	Bachelor's	Master's	Specialist's	Doctor's
Male:	7.1%	71.6%	11.3%	10.0%
Female:	10.3%	72.7%	6.7%	10.3%

Special Education Administrators:

	Bachelor's	Master's	Specialist's	Doctor's
Male:	4.3%	67.3%	17.1%	10.9%
Female:	6.4%	77.3%	4.7%	11.6%

Male administrators average 1.7 years more in age and 1.4 years more in experience than female administrators. However, as a group, female administors appear to fare well in special education. Female administrators hold a greater percentage of master's and doctoral degrees with a greater percent of males holding the specialist degree. More special education female administrators have attained the master's and doctoral level of education than their general education counterparts.

Special Education Directors Workforce

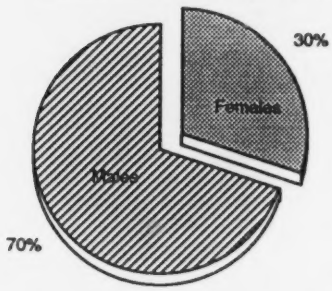


Using 1975 as a beginning point, the number of female special edu-

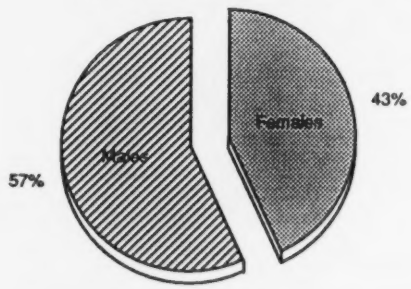
cation administrators has continued to increase, while the number of male administrators increased only to 1981, then declined to the present level.

Female administrators in general education make up 30% of that workforce; in special education, female administrators make up a greater percentage: 43%. Male administrators in special education earn an average of $1,600 more than female administrators. However, female administrators in special education make an average of only $485 less than male administrators in general education and an average of $3,289 more than female administrators in general education.

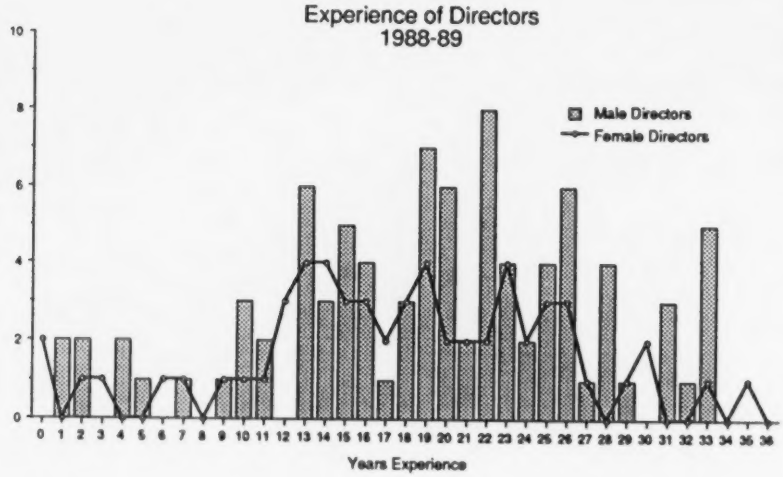
General Education Administrators



Special Education Directors



Experience of Directors
1988-89



Finally, when viewing years of experience of Michigans directors, the mean is 23.1 years. Over the next few years, no unusual increase in the number of directors who could retire is anticipated.

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Selected Data Tables

Data used for Prevalence Model

Based on Impairment

	Number of Students	Max by Rule	Projected Demand	Actual Staff	Need Surplus
EMI	12795	15	853.0	1808	955.0
TMI	6124	15	408.3	669	260.7
SMI	2396	15	159.7	258	98.3
EI	12666	15	844.4	1839	994.6
LD	33380	15	2225.3	2030	-195.3
HI	1949	7	278.4	346	67.6
VI	500	10	50.0	71	21.0
POHI	3122	15	208.1	251	42.9
SXI	4272	9	474.7	281	-193.7
PPI	2331	24	97.1	367	269.9
SLI	1540	15	102.7	131	28.3
AI	869	5	173.8	142	-31.8
RR	29343	19	1544.4	1541	-3.4
TC	14302	25	572.1	1703	1130.9

Based on Program

	Number of Students	Max by Rule	Projected Demand	Calculated Staff	Need Surplus
EMI Program	9186	15	612.4	1,740.5	1128.1
TMI Program	7184	15	478.9	656.0	177.1
SMI Program	2340	15	156.0	254.0	98.0
EI Program	15119	15	1007.9	1,768.2	760.3
LD Program	25530	15	1702.0	1,886.1	184.1
HI Program	1829	7	261.3	330.3	69.0
VI Program	407	10	40.7	64.9	24.2
POHI Program	2153	15	143.5	240.0	96.5
SXI Program	2082	9	231.3	274.7	43.4
PPI Program	5196	24	216.5	328.3	111.8
SLI Program	1121	15	74.7	114.0	39.3
AI Program	666	5	133.2	136.5	3.3
RR	29343	19	1544.4	1,380.2	-164.1
TC	13304	25	532.2	1377.3	845.1

Provisional Certificates Issued by MDE (with no prior experience)

Issued by In-state IHE's

	MI	S/L	POHI	EI	H/H	VI	HI	LD	AI	Total
1988-89	99	35	16	70	13	7	8	13	0	261
1987-88	208	57	32	151	22	18	31	37	0	556
1986-87	199	67	42	165	39	17	34	38	0	601
1985-86	239	81	43	194	37	22	33	28	0	677
1984-85	256	71	57	189	52	30	31	45	0	731
1983-84	272	51	53	248	53	43	46	33	0	799
1982-83	360	60	83	264	79	43	54	62	0	1005
1981-82	398	75	86	310	86	46	55	95	0	1151
% of decline	-75.13%	-53.33%	-81.40%	-77.42%	-84.88%	-84.78%	-85.45%	-86.32%	*Error*	-77.32%

Issued by In-state IHE's (with 20% correction in MI for dual endorsements)

	MI	S/L	POHI	EI	H/H	VI	HI	LD	AI	Total
1988-89	79.2	35	16	70	13	7	8	13	0	241
1987-88	166.4	57	32	151	22	18	31	37	0	514
1986-87	159.2	67	42	165	39	17	34	38	0	561
1985-86	191.2	81	43	194	37	22	33	28	0	629
1984-85	204.8	71	57	189	52	30	31	45	0	680
1983-84	217.6	51	53	248	53	43	46	33	0	745
1982-83	288	60	83	264	79	43	54	62	0	933
1981-82	318.4	75	86	310	86	46	55	95	0	1071
% of decline	-75.13%	-53.33%	-81.40%	-77.42%	-84.88%	-84.78%	-85.45%	-86.32%	*Error*	-77.49%

Special Education Teacher Assignments

Assigned: 1988-89

	MI	S/L	LD	TMI	EI	POHI	H/H	VI	HI	AI	Total
Teachers assigned	3414	1605	3235	362	2508	285	84	153	417	138	12201
New	117	49	68	2	106	6	1	0	14	7	370
% new assigned	3.31%	2.96%	2.06%	0.55%	4.06%	2.06%	1.18%	0.00%	3.25%	4.83%	14271
% out-of-state	9.41%	13.79%	11.60%	5.80%	5.62%	4.91%	4.76%	7.19%	11.51%	7.63%	9.57%

Assigned: 1987-88

	MI	S/L	LD	TMI	EI	POHI	H/H	VI	HI	AI	Total
Teachers assigned	3357	1560	3129	367	2450	285	82	157	427	120	11934
New	161	67	98	8	131	8	4	4	17	18	516
% new assigned	4.58%	4.12%	3.04%	2.13%	5.08%	2.73%	4.65%	2.48%	3.83%	13.04%	13971
% out-of-state	9.45%	14.76%	11.27%	6.27%	5.51%	4.91%	1.22%	7.64%	12.41%	5.0%	9.59%

Assigned: 1986-87

	MI	S/L	LD	TMI	EI	POHI	H/H	VI	HI	AI	Total
Teachers assigned	3235	1446	2874	356	2306	273	79	152	427	92	11240
New	174	51	86	6	166	6	1	5	20	4	519
% new assigned	5.10%	3.41%	2.91%	1.66%	6.72%	2.15%	1.25%	3.18%	4.47%	4.17%	13111
% out-of-state	9.50%	14.67%	10.69%	5.90%	5.29%	3.66%	1.27%	7.89%	12.65%	2.41%	9.33%

Teacher Placements

New assignments in the 1988-89 SY

	MI	SL	LD	EI	POHI	VI	HI	AI	Total Assigned	Placed in Michigan	Endorsements issued 87-88
CMU	25	8	7	21	0	0	1	0	62	76.5%	11.61%
EMU	20	14	11	26	2	0	4	0	77	62.6%	14.42%
GVS	15	0	8	15	0	0	2	2	42	53.8%	7.87%
MSU	11	12	2	9	0	0	3	0	37	71.2%	6.93%
NMU	12	3	2	0	0	0	1	0	18	66.7%	3.37%
WSU	10	1	2	4	2	0	1	4	24	92.3%	4.49%
WMU	10	4	1	13	2	0	0	0	30	43.5%	5.62%
Total of all Michigan IHEs											
	111	43	61	98	6	0	12	7	338		
Assigned	53.37%	75.44%	164.86%	64.90%	18.75%	0.00%	38.71%	*Error*	63.30%		

Endorsements issued in the 87-88 SY

	MI	SL	LD	EI	POHI	VI	HI	AI	Total Graduates
CMU	36	20	0	25	0	0	0	0	81
EMU	41	13	0	36	10	9	14	0	123
GVS	36	0	0	32	2	0	8	0	78
MSU	12	14	0	17	0	1	8	0	52
NMU	24	2	0	1	0	0	0	0	27
WSU	12	1	0	0	11	2	0	0	26
WMU	23	5	0	26	9	6	0	0	69
Total of all Michigan IHEs									
	208	57	37	151	32	18	31	0	534

Teacher Placements

New assignments in the 1987-88 SY

	MI	SL	LD	EI	POHI	VI	HI	AI	Total Assigned	Placed in Michigan	Endorsements issued 86-87
CMU	33	13	9	21	0	0	0	0	76	93.8%	13.77%
EMU	41	16	16	37	5	2	5	1	123	83.1%	22.28%
GVS	11	0	9	11	1	0	1	1	34	47.2%	6.16%
MSU	11	12	8	18	1	0	6	0	56	78.9%	10.14%
NMU	12	3	3	0	0	0	0	0	18	78.3%	3.26%
WSU	15	4	3	7	0	0	2	0	31	91.2%	5.62%
WMU	13	4	5	14	1	0	0	0	37	68.5%	6.70%
Total of all Michigan IHEs											
	146	54	86	123	8	3	14	5	439		
Assigned	73.37%	80.60%	307.14%	74.55%	19.05%	17.65%	41.18%	*Error*	79.53%		

Endorsements issued in the 86-87 SY

	MI	SL	LD	EI	POHI	VI	HI	AI	Total Graduates
CMU	30	20	0	31	0	0	0	0	81
EMU	40	13	0	53	22	9	11	0	148
GVS	32	0	0	27	2	0	11	0	72
MSU	19	15	0	20	0	6	11	0	71
NMU	23	0	0	0	0	0	0	0	23
WSU	16	2	0	0	16	0	0	0	34
WMU	18	16	0	16	2	2	0	0	54
Total of all Michigan IHEs									
	199	67	28	165	42	17	34	0	552

Teacher Placements

New assignments in the 1986-87 SY

	MI	SL	LD	EI	POHI	VI	HI	AI	Total Assigned	Placed Michigan	Endorsements issued 85-86
CMU	44	10	8	37	0	0	0	1	100	100.0%	15.63%
EMU	29	6	9	39	3	3	5	1	95	60.5%	14.84%
GVS	21	0	10	13	1	0	3	0	48	62.3%	7.50%
MSU	17	8	7	26	0	0	6	0	64	81.0%	10.00%
NMU	5	0	3	1	0	0	0	0	9	56.3%	1.41%
WSU	19	6	7	4	1	1	1	2	41	82.0%	6.41%
WMU	12	11	4	19	1	1	0	0	48	60.8%	7.50%
Total of all Michigan IHEs	158	44	75	154	6	5	17	4	463		
Assigned	66.11%	54.32%	267.86%	79.38%	13.95%	22.73%	51.52%	*Error*	72.34%		

Endorsements issued in the 85-86 SY

	MI	SL	LD	EI	POHI	VI	HI	AI	Total Graduates
CMU	44	15	0	41	0	0	0	0	100
EMU	44	14	0	62	9	11	17	0	157
GVS	37	0	0	28	5	0	7	0	77
MSU	22	25	0	22	0	3	7	0	79
NMU	14	2	0	0	0	0	0	0	16
WSU	22	4	0	0	22	2	0	0	50
WMU	30	16	0	22	6	5	0	0	79
Total of all Michigan IHEs	239	81	28	194	43	22	33	0	640

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